



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/342,350	06/29/1999	AJAY CHANDRA GUMMALLA	CISCP089/960	6425

22434 7590 10/08/2002

BEYER WEAVER & THOMAS LLP
P.O. BOX 778
BERKELEY, CA 94704-0778

EXAMINER

JAIN, RAJ K

ART UNIT

PAPER NUMBER

2664

DATE MAILED: 10/08/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	09/342,350	GUMMALLA ET AL. <i>ll</i>
	Examiner Raj K. Jain	Art Unit 2664

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 29 June 1999.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-96 is/are pending in the application.
 - 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 1-9, 15-23, 25-32, 39-50, 53-56, 59-68, 72-77, 79, 85-94 is/are rejected.
- 7) Claim(s) 10-14, 24, 33-38, 51, 52, 57, 58, 69-71, 78, 80-84, 95 and 96 is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) The proposed drawing correction filed on _____ is: a) approved b) disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.
- 12) The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
 - a) The translation of the foreign language provisional application has been received.
- 15) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)
3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>3</u>	6) <input type="checkbox"/> Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claim(s) 1-5, 18-20, 27, 28, 32, 41, 48-50, 55, 56, 75, 61-64, 75, 87, 90, 92 & 94 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakano et al. in view of Raychaudhuri et al.
3. Regarding claims 1, 18, 27, 32, 41, 48-50, 55, 75, 61, and 75, Nakano teaches an ATM transmission system over a mobile communications system and the sharing of channels amongst a plurality of call types, see abstract, Fig 1 and col 1. The call “types” (say a, b, c) are transmitted at every “T” interval to utilize the channel most efficiently see Fig 3 and description under embodiment 1. Fig 4 illustrates the reservation of cell slots for transmitting of the ATM cells of respective call types and Fig 6 illustrates one call for each of the different types of mobile communication systems (Figs 2A & 2B). Nakano does not teach the allocation of slots based on milliseconds and the use of a control system for support of various service classes (i.e. CBR, and VBR). Raychaudhuri teaches the allocation of slots based on milliseconds and the use of a control system (MAC 102 see Fig 4) for support of various service classes (i.e. CBR, and VBR), see abstract, Fig 4 and cols 6-7. This provides for a broadband wireless ATM network compatible with multiservice/quality of service for services including CBR and ABR based on

bandwidth requirements. Therefore incorporating a MAC (100, 104 see Fig 4) as taught by Raychaudhuri within the base station configuration of Nakano would improve the traffic flow of the different call types by allocating appropriate timeslot durations for the different call usages and thereby improving the channel efficiency. Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Nakano to include a MAC processor as taught by Raychaudhuri.

4. Regarding claims 87, 90, 92 & 94, the use of a computer readable program and code is inherent for the subject invention in order for it execute the required instructions.

5. Regarding Claim(s) 2-5, 19-20, 28, 56, 62-64, Raychaudhuri teaches the subframe concept to facilitate the allocation of CBR bandwidths based on some "T" millisecounds, see col 7 and claims 1-5. Since no specific values have been assigned for the variables used, thus one may interpret and input the desired values to arrive at the conditions of our subject claims and divide a byte slot into appropriate minislots for the purposes of CBR use and other uses as claimed.

6. Claims 7-9, 15, 42, 43, 66-68, 72, 76, 77, 88, 89, 91 and 93 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakano et al, in view of Raychaudhuri et al. further in view of Dail et al. Nakano teaches an ATM transmission system over a mobile communications system and the sharing of channels amongst a plurality of call types. Raychaudhuri teaches the allocation of slots based on milliseconds and the use of a control system (MAC 102 see Fig 4) for support of various service classes (i.e. CBR, and VBR). Nakano and Raychaudhuri do not teach the dynamical allocation of bandwidth using mini-slots as a function of communication

traffic. Dail teaches using mini-slots as a function of communication traffic to efficiently allocate bandwidth between various traffic profiles, see abstract, Figs 1, 10 & 11 and respective portions of the specs. The minislots are only used for transmission requests (within this invention) and not data, although this adds overhead, it still affords efficiency within some traffic profiles, see col 10-12. It is interpreted by the examiner that the minislots allocation scheme may also be employed for other fields of use including ALLOC_STATE field, ALLOC_VACANCY field etc. as appropriate and to be used as a status indicator of whether a given minislot is reserved or vacant. Dail also teaches the reservation and contention of timeslots with an acknowledgement message appended as part of the MAP message, see Fig 3 and 8 and cols 6-7. Since the division of a single timeslot into number of minislots provides a more efficient bandwidth usage amongst various traffic profiles (voice, video, data, or control), thus including the minislot scheme of Dail within Nakano would also improve the bandwidth usage of Nakano's mobile traffic for the different call types, using different call intervals for transmission. Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to include the minislot scheme of Dail within Nakano improving bandwidth allocation for different communications traffics.

7. Claims 6, 22, 46, 47, 65 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakano et al, in view of Raychaudhuri et al. further in view of Yuen et al. Yuen teaches the application of service ID, in this case to identify a particular user's preference for subscriber services, see Figs 2 & 5 and cols 7-9. It is common knowledge in the art that the service ID field can be programmed to identify other applications such as for identifying a node if desired,

therefore one can easily modify the service ID field for identifying a particular node associated with each grant element and a grant size within a subject invention. Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to include a service ID field within the CBR service request field of Raychaudhuri to be included within Nakano so as to identify a particular node associated with each grant element and a grant size for indicating the grant size of each respective grant element.

8. Claims 16, 25, 30, 39, 53, 59, 73 and 85 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakano et al, in view of Raychaudhuri et al. further in view of Sugita. Sugita teaches a method and apparatus for ensuring wireless transmission among respective communicating apparatuses when constructing a local area network with a plurality of wireless communicating apparatuses. Sugita teaches a wireless network with a plurality of wireless nodes, see Figs 1, 3 and 4 and col 4, this serves to provide quick transmission of data with low infrastructure requirements and quick turnaround to maximum users. Thus incorporating this technique within Nakano would also improve the rapid transmission of services in hard to reach areas such as mountains and difficult terrain where wireless installations would be quicker and cheaper. Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to include the wireless network of Sugita within Nakano.

9. Claims 17, 26, 31, 40, 54, 60, 74 and 86 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakano et al, in view of Raychaudhuri et al. further in view of Leano et al. Leano teaches a method apparatus for performing periodic ranging with a cable modem see Figs

1 & 2 and cols 1-4, 7-8. He illustrates the use of a cable modem termination system (CMTS) 104 connected to a fiber node 108 by pairs of optical fibers 106. The primary functions of the CMTS are (1) receiving signals from external sources 100 and converting the format of those signals, e.g., microwave signals to electrical signals suitable for transmission over the cable system. Since the CMTS converts signals from one form to another, it would be advantageous in a wireless network to convert digital data to a modulated RF signal and feeds that digital data to a computer for processing as appropriate and vice versa in the reverse path. Therefore including a CMTS within a wireless head end would provide the necessary conversions and processing of information as appropriate. Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to include the CMTS of Leano within Nakano.

Claim Objections

10. Claims 10-14, 24, 33-38, 51, 52, 57, 58, 69-71, 78, 80-84, 95, 96 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Raj K. Jain whose telephone number is 703-305-5652. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wellington Chin can be reached on 703-305-4366. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9314 for regular communications and 703-872-9314 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-4700.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks
Washington, D.C. 20231

Or faxed to:

(703) 305-3988, (for formal communications intended for entry)

Or:

(703) 305-3988 (for informal or draft communications, please label "Proposed" or "DRAFT")

Hand-delivered responses should be brought to Crystal Park II, 2021 Crystal Drive, Arlington, VA., Sixth Floor (Receptionist).

rj
September 20, 2002

AM 8/20/02
AM 8/20/02
AM 8/20/02